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UNITED STATES PATENT APPLICATION

OF

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FOR

CROSS CHANNEL DELIVERY SYSTEM AND METHOD

002-408-4000

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BACKGROUND OF THE INVENTION

A. Field of the Invention

This invention relates generally to data processing systems and, more particularly, to electronic delivery systems.

B. Description of the Related Art

The world is quickly becoming wired. Nearly all households and businesses both have telephone and cable access. Now, more than ever, consumers may choose from a plurality of transmission mediums to access the Internet, such as cable, telephone, satellite, or some other high speed connection. As more consumers gain access to the Internet through a multitude of available transmission mediums, things previously done in the real world are now available through the Internet using at least one of the transmission mediums.

Probably the most commercialized use of the Internet is the World Wide Web. Every day, more people gain access to the Web, and every day, people are using the Web to shop online. Online shopping provides a level of convenience consumers want, need and will soon demand. Electronic commerce or "e-commerce" is the term often used to refer, at least in part, to online shopping on the Web.

With the explosive growth of online shopping on the Internet, the need for online delivery of digital items has also considerably grown. Online delivery refers to delivery of electronic items using an electronic format in any transmission medium. For example, a book, movie, or even a single track from a CD may be delivered to a consumer as a digital item. Consumers desire these digital items delivered immediately in a format suitable for viewing or playback using a consumer

device, such as a computer. With the number of online stores that provide digital delivery growing exponentially every year, consumer devices capable of ordering, receiving, and viewing have also become more prevalent.

For example, WebTV, a popular Internet consumer device, is capable of ordering, and receiving digital items using more than one transmission medium. That is, the WebTV device provides access to the Internet as well as access to a conventional TV. Although the WebTV device enables consumers to use multiple transmission mediums using the same device, it does so at the expense of limited upgradeability. A consumer cannot specify a new transmission medium for delivery, unless the WebTV device supports the transmission medium. Even more so, any cross-coupling of transmission mediums is provided at the WebTV device. And, in most instances, when shopping online using the WebTV device, the consumer initiates the shopping session by visiting a site. Only at that time, may the consumer then select an item to purchase, and then have the item delivered to the WebTV device.

Therefore, there is a need for a system capable of centralizing the cross coupling of transmission mediums with limited configuration requirements at a consumer's location. Such a system not only permits a consumer to shop online using one transmission medium and receive a purchased item using a different transmission medium, but also it permits easy upgrades, or the addition of new transmission mediums without having to modify any consumer device.

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SUMMARY OF THE INVENTION

Methods and systems consistent with the present invention provide a cross channel fulfillment system that enables consumers to purchase and receive items using different transmission mediums. The fulfillment system is a centralized distribution system that maintains information relating to consumers and has access to multiple transmission mediums. Specifically, the fulfillment system contains a database of consumer contact information relating to each transmission medium. The fulfillment system uses a remote device to provide information to consumers. The remote device transmits and receives broadcast messages including information relating to purchasable items. The fulfillment system may deliver a purchased item to the consumer using a medium different from that used to purchase the item.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate an implementation of the invention and, together with the description, serve to explain the advantages and principles of the invention. In the drawings,

Figure 1 is a schematic representation of the architecture of a network in a manner consistent with the principle of the present invention;

Figure 2A depicts a more detailed diagram of the remote device depicted in Fig. 1;

Figure 2B depicts a more detailed diagram of the client device depicted in Fig. 1;

Figure 3 depicts a more detailed diagram of the fulfillment system depicted in Fig. 1;

Figure 4 illustrates a fulfillment system and its relationship to a database in a manner consistent with the principles of the present invention;

Figure 5 depicts a flow chart of the steps performed by the fulfillment system of Fig. 1 in

a manner consistent with the principles of the present invention; and

Figure 6 depicts a flow chart of the steps performed by remote device of Fig. 1 in a manner consistent with the principles of the present invention.

DETAILED DESCRIPTION

The following detailed description of the invention refers to the accompanying drawings. Although the description includes exemplary implementations, other implementations are possible, and changes may be made to the implementations described without departing from the spirit and scope of the invention. The following detailed description does not limit the invention. Instead, the scope of the invention is defined by the appended claims. Wherever possible, the same reference numbers will be used throughout the drawings and the following description to refer to the same or like parts.

Overview

Methods and systems consistent with the present invention provide a cross channel fulfillment and delivery system that transmits and receives information relating to purchasable items to and from consumers using multiple transmission mediums. Such methods and systems enable consumers to automatically and electronically receive purchased items from the fulfillment system using a different medium than used to purchase the items.

Methods and systems consistent with the present invention also provide consumers an interface associated with a remote device to facilitate purchasing purchasable items. A consumer may select a displayed item on the consumer interface to purchase. For example, a consumer may select digital songs or software to be delivered. A client device, capable of receiving and using the

items, receives the purchasable items.

Figure 1 shows a block diagram of the architecture of a cross channel fulfillment system 100 in a manner consistent with the principles of the present invention. System 100 contains a remote device 102, fulfillment system 104, and a client device 106. Remote device 102 enables consumers to view purchasable items using a video display, such as a television monitor, and select purchasable items using an input device, such as an infrared controller. Remote device 102, placed at a consumer location, receives broadcast messages from fulfillment system 104 and transmits purchase instructions to fulfillment system 104 using any broadcast medium, such as radio waves. A purchase instruction may include information, such as purchase information (e.g., PIN number, credit cards), delivery information (e.g., e-mail address), and/or information identifying the items to purchase (e.g., SKU). The purchase information, along with a remote device identification, is transmitted to fulfillment system 104 for processing. Remote device 102 also contains a caching mechanism for storing recently received broadcast messages in case the consumer does not initially see or hear the broadcast message. In addition remote device 102 may transmit the purchase information realtime, periodically on a scheduled basis, or when polled by fulfillment system 104.

When a purchase instruction is received at fulfillment system 104, the system determines if the instruction is valid. To do so, the system locates, in various connected databases, records associated with the consumer. The records may include a remote device identification, a consumer identification, a PIN number, an e-mail address, and a payment identifier. System 104 cross references the remote device identification with the delivery information and payment information. If the delivery information or payment information is incomplete or faulty, system 104 transmits a message to remote device 102 prompting a valid completion. Otherwise, the order is considered

valid, and the item may be electronically sent to the consumer in a medium specified by the consumer when placing the order (e.g., e-mail delivery).

The cross channel fulfillment system provides a number of benefits over traditional electronic ordering systems. First, the fulfillment system broadcasts information corresponding to purchasable items to a plurality of consumers. This simple approach enables the fulfillment system to make many offers to many consumers at the same time. Unlike traditional delivery systems where the consumer initiates the shopping session, the fulfillment system provides information relating to purchasable items to consumers without any consumer interaction. Moreover, by broadcasting the information, a consumer may first see (or listen) to the purchasable item before deciding whether to purchase it. That is, since the remote device stores the broadcasted information for a period of time (e.g., in cache) after the broadcast, a consumer unable to initially view the broadcast may still purchase the items. Second, the system manages multiple transmission mediums from a centralized location (e.g., Internet, cable, satellite). Any updates to the remote devices, or new transmission mediums for delivery are easily implemented at the centralized location instead of having to individually upgrade each remote device that converges multiple transmission mediums. A centralized database maintains all transmission mediums, including which consumers may use which mediums for delivery. Third, the fulfillment system easily implements non-real time back channel delivery to a consumer's location. That is, if there is excessive load at the time a consumer transmits a purchase instruction to the fulfillment system, the system delivers the purchased items at a later time. Since the delivery may be on a transmission medium different from the medium used to order the item, the fulfillment system can take advantage of the non-real time fulfillment.

Finally, the fulfillment system links consumer records in a centralized location. This helps

minimize outstanding consumer records for various transmission mediums since the system maintains a database that can be used to cross reference the transmission mediums.

System Architecture and Operation

Figure 2A depicts a more detailed diagram of remote device 102, which contains a memory 202, a secondary storage device 210, a CPU 220, an input device 230, a video display 240, and a transmission component 250. Memory 202 contains device software 204 that enables a consumer to send instructions to fulfillment system 104. An instruction may be a request to purchase digital items, such as the digital version of books or music. Secondary storage device 210 contains unique identification information that identifies remote device 102, such as an identification number and other information identifying the consumer. Transmission component 250 communicates with fulfillment system 104 by receiving broadcast messages and sending purchase instructions. For example, transmission component 250 may communicate with fulfillment system 104 using radio waves. One skilled in the art will appreciate that remote device 102 may be composed of separate components, such as a set- box for a television, decoder device, and a storage device (e.g., external hard drive, or network storage device).

Figure 2B depicts a more detailed diagram of a client device 106, which contains a memory 260, a secondary storage device 270, a central processing unit (CPU) 280, an input device 290, and a video display 292. Memory 260 includes a receiver program 262 that allows a consumer to receive digital items in a different transmission medium different from the transmission medium used for the broadcast message. For example, a receiver program 262 may be an e-mail program, such as the Eudora e-mail client, from Eudora.

As shown in Figure 3, fulfillment system 104 includes a memory 320, a secondary storage

device 330, a CPU 340, an input device 350, a video display 360, and a transmission component 370. Memory 320 includes order software 322 and clearing house software 324. Order software 322 determines whether the consumer is authorized to purchase the purchasable item. Clearinghouse software 324 cross references remote device identifications with consumer delivery information as well as payment information. Clearinghouse software also transmits purchasable items to client device 106. Secondary storage device 330 contains a database 332 that correlates information associated with each consumer, such as remote device 102 information and client device 106 information, further described below. Transmission component 370 transmits broadcast messages to and receives purchase instructions from a remote device 102.

As shown in Figure 4, database 332 contains a catalog information table 402 and a consumer information table 404. Catalog information table 402 contains information associated with all purchasable items, such as a unique identification number, purchasable item name, and a digital representation of the purchasable item. Consumer information table 404 contains consumer information corresponding to consumers able to purchase items. For example, a consumer may be able to purchase items if the consumer has previously registered with fulfillment system 104. In such a case, consumer information table 404 may indicate so. A consumer may register with fulfillment system 104 by submitting billing, payment, and identification information (e.g., PIN). A record 412 includes for each consumer: a consumer identification; a PIN; a remote device identification; delivery information (e.g., e-mail address); and a payment information (e.g., credit card) One skilled in the art will appreciate that tables 402, 404 may contain additional information, and may be located in multiple databases. For example, an Internet Service Provider (ISP) may contain information relating to the delivery information, whereas a cable operator may contain information relating to

payment information and consumer information.

Figure 5 depicts a flow chart of the steps performed by fulfillment system 104. First, fulfillment system 104 transmits a broadcast message identifying purchasable items to a remote device 102 (step 502). Fulfillment system 104 uses transmission component 370 to communicate with remote device 102. In response, if a consumer purchases an item, fulfillment system 104 receives a purchase instruction (step 504). The instruction may include a remote device 102 identification, a consumer PIN, a list of items purchased by the consumer, and a delivery instruction. The instruction may be sent in a transmission medium similar to the broadcast in step 502.

Once fulfillment system 104 receives the instruction, fulfillment system 104 then accesses database 332 to verify the purchase instruction (step 506). Fulfillment system 104 locates a record 412 that corresponds to the consumer identification. Fulfillment system 104 checks if consumer supplied PIN corresponds to the PIN listed in record 412 (step 508). If the PINs do not match, or if there is other incomplete information (e.g., missing PIN, payment information, or items) fulfillment system 104 may transmit a message to remote device 102 requesting reverification and/or updated information (step 510). However, if the PINs match, fulfillment system 104 first accounts for the purchase (step 512). To account for the purchase, fulfillment system 104 may perform a billing function, such as charging the consumer's credit card, or creating a billing record to send to the consumer.

Once the purchase is accounted for, order software 322 may notify clearinghouse software 324 to transmit the item to the consumer using the delivery method indicated in the purchase instruction (step 514). The notification may contain an item identification and a consumer identification. In most instances, the delivery method will be a transmission medium different from

the transmission medium used for the broadcast message. Once clearinghouse software 324 receives the notification, clearinghouse software 324 may access database 332 to locate a delivery address and transmits the item to client device 106 (step 516).

Figure 6 depicts a flow chart of the steps performed by remote device 102. First, remote device 102 receives a broadcast message from fulfillment system 104 (step 602). The broadcast message contains information identifying a purchasable item as well as the purchasable item itself. For example, in the case of music, the broadcast message may include a single track from a CD as well as the CD identification (e.g., SKU number). This way, the consumer may first listen to the CD and, if the consumer decides to purchase the CD, may do so by using the CD identification to create a purchase instruction. If however, the consumer does not immediately access remote device 102, the broadcast message may be stored for a predetermined period of time in memory 202 of remote device 102. This way, the consumer may access the broadcast message at a later period.

If the consumer decides to purchase the purchasable item, remote device 102 transmits a response to the broadcast message to fulfillment server 104, as described above. Once received at fulfillment server 104, remote device 102 may display the purchasable item on video display 260 (step 604). For example, the broadcast message may be an audio clip from a CD, or a textual message describing a digital book. The message may be stored in secondary storage device 210 so that the consumer may later purchase a purchasable item. If the consumer purchases an item, remote device 102 receives the consumer's PIN number, and an item identification (step 606). Next, remote device 102 transmits the consumer information, identification of the selected item to be purchased, and remote device 102 identification information as a purchase instruction to fulfillment system 104 (step 608). In doing so, fulfillment system 104 may then determine if the purchase

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